```
                                 I  3

MMM         MMM     AAAAAAAAA     RRRRRRRRRRRR     BBBBBBBBBBBB     LLL                 IIIIIIIII
MMM         MMM     AAAAAAAAA     RRRRRRRRRRRR     BBBBBBBBBBBB     LLL                 IIIIIIIII
MMM         MMM     AAAAAAAAA     RRRRRRRRRRRR     BBBBBBBBBBBB     LLL                 IIIIIIIII
MMMMMM   MMMMMM  AAA         AAA  RRR         RRR  BBB         BBB  LLL                    III
MMMMMM   MMMMMM  AAA         AAA  RRR         RRR  BBB         BBB  LLL                    III
MMMMMM   MMMMMM  AAA         AAA  RRR         RRR  BBB         BBB  LLL                    III
MMM   MMM   MMM  AAA         AAA  RRR         RRR  BBB         BBB  LLL                    III
MMM   MMM   MMM  AAA         AAA  RRR         RRR  BBB         BBB  LLL                    III
MMM   MMM   MMM  AAA         AAA  RRR         RRR  BBB         BBB  LLL                    III
MMM         MMM  AAA         AAA  RRRRRRRRRRRR     BBBBBBBBBBBB     LLL                    III
MMM         MMM  AAA         AAA  RRRRRRRRRRRR     BBBBBBBBBBBB     LLL                    III
MMM         MMM  AAA         AAA  RRRRRRRRRRRR     BBBBBBBBBBBB     LLL                    III
MMM         MMM  AAAAAAAAAAAAAAA  RRR   RRR        BBB         BBB  LLL                    III
MMM         MMM  AAAAAAAAAAAAAAA  RRR   RRR        BBB         BBB  LLL                    III
MMM         MMM  AAAAAAAAAAAAAAA  RRR   RRR        BBB         BBB  LLL                    III
MMM         MMM  AAA         AAA  RRR      RRR     BBB         BBB  LLL                    III
MMM         MMM  AAA         AAA  RRR      RRR     BBB         BBB  LLL                    III
MMM         MMM  AAA         AAA  RRR      RRR     BBB         BBB  LLL                    III
MMM         MMM  AAA         AAA  RRR         RRR  BBBBBBBBBBBB     LLLLLLLLLLLLLLL     IIIIIIIII
MMM         MMM  AAA         AAA  RRR         RRR  BBBBBBBBBBBB     LLLLLLLLLLLLLLL     IIIIIIIII
MMM         MMM  AAA         AAA  RRR         RRR  BBBBBBBBBBBB     LLLLLLLLLLLLLLL     IIIIIIIII
```

```
_$25

Valu
----
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
0020
```

```
**FILE**ID**MARBLI                                                  M  4

          MM      MM    AAAAAA    RRRRRRRR    BBBBBBBB    LL            IIIIII
          MM      MM    AAAAAA    RRRRRRRR    BBBBBBBB    LL            IIIIII
          MMMM  MMMM  AA      AA  RR      RR  BB      BB  LL              II
          MMMM  MMMM  AA      AA  RR      RR  BB      BB  LL              II
          MM  MM  MM  AA      AA  RR      RR  BB      BB  LL              II
          MM  MM  MM  AA      AA  RR      RR  BB      BB  LL              II
          MM      MM  AA      AA  RRRRRRRR    BBBBBBBB    LL              II
          MM      MM  AA      AA  RRRRRRRR    BBBBBBBB    LL              II
          MM      MM  AAAAAAAAAA  RR  RR      BB      BB  LL              II
          MM      MM  AAAAAAAAAA  RR  RR      BB      BB  LL              II
          MM      MM  AA      AA  RR    RR    BB      BB  LL              II          ....
          MM      MM  AA      AA  RR    RR    BB      BB  LL              II          ....
          MM      MM  AA      AA  RR      RR  BBBBBBBB    LLLLLLLLLL    IIIIII        ....
          MM      MM  AA      AA  RR      RR  BBBBBBBB    LLLLLLLLLL    IIIIII        ....

          LL            IIIIII      SSSSSSSS
          LL            IIIIII      SSSSSSSS
          LL              II      SS
          LL              II      SS
          LL              II      SS
          LL              II      SS
          LL              II        SSSSSS
          LL              II        SSSSSS
          LL              II              SS
          LL              II              SS
          LL              II              SS
          LL              II              SS
          LLLLLLLLLL    IIIIII    SSSSSSSS
          LLLLLLLLLL    IIIIII    SSSSSSSS
```

```
0 MODULE MARBLI(IDENT='V04-000',MAIN=CONVERT %TITLE'MARS to BLISS Macro Converter')=
1 BEGIN
1
1 !****************************************************************************
1 !*                                                                          *
1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                 *
1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.                  *
1 !*  ALL RIGHTS RESERVED.                                                    *
1 !*                                                                          *
1 !*  THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED   *
1 !*  ONLY IN  ACCORDANCE WITH  THE  TERMS  OF  SUCH  LICENSE  AND WITH THE   *
1 !*  INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR  ANY  OTHER   *
1 !*  COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY   *
1 !*  OTHER PERSON.  NO TITLE TO AND OWNERSHIP OF  THE  SOFTWARE IS  HEREBY   *
1 !*  TRANSFERRED.                                                            *
1 !*                                                                          *
1 !*  THE INFORMATION IN THIS SOFTWARE IS  SUBJECT TO CHANGE WITHOUT NOTICE   *
1 !*  AND  SHOULD  NOT  BE  CONSTRUED AS  A COMMITMENT BY DIGITAL EQUIPMENT   *
1 !*  CORPORATION.                                                            *
1 !*                                                                          *
1 !*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS   *
1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                 *
1 !*                                                                          *
1 !*                                                                          *
1 !****************************************************************************
1
1 !++
1 !
1 ! ABSTRACT:
1 !       The routines in this module, along with XPORT
1 !       convert a specifically formatted MARS macro file into a
1 !       BLISS macro file.
1 !
1 !       The logic in this module is somewhat ad hoc and
1 !       any perturbation of the format of the MARS file may result
1 !       in these routines not working.
1 !
1 ! AUTHOR:
1 !       P.C. Marks, CREATION DATE: 3 FEB 77
1 !
1 ! MODIFIED BY:
1 !
1 !       V03-001 MLJ0093         Martin L. Jack, 14-Jul-1982  11:38
1 !               If the ".MACRO" line contains the string "CJF$", change the
1 !               routine prefix from SYS$ to CJF$.  Do the same for RUF.
1 !
1 !       V02-003         BLS0073         Benn Schreiber          26-Aug-1981
1 !               Disable per-macro output
1 !
1 !       V02-002         APL0001         Al Lehotsky             4-Jun-1981
1 !               Change for 31-character names which was missed earlier.
1 !
1 !       V02-001         BLS0055         Benn Schreiber          3-Jun-1981
1 !               Use BLISS linkage and GENERAL addressing mode
1 !
1 !       A.P. Lehotsky   31-Oct-79       Transport to VAX. Suppress "()" in
1 !                                       macros without arguments, e.g. $HIBER
```

```
;    58         0058  1  !
;    59         0059  1  !--
;    60         0060  1
;    61         0061  1
;    62         0062  1  FORWARD ROUTINE
;    63         0063  1       CONVERT,                                ! Main routine
;    64         0064  1       CONVMACRO:           NOVALUE,           ! Convert a .MACRO definition
;    65         0065  1       OUTLIST,                                ! Output a parameter list
;    66         0066  1       CONVARGLIST:         NOVALUE;           ! Convert argument list of a .MACRO
;    67         0067  1
;    68         0068  1  MACRO
```

```
MAR
V04

4F

53
41
```

```
   1      VERSTR=      'MARBLI V03-001' %;
   1 LIBRARY 'SYS$LIBRARY:XPORT';
   1
   1 LITERAL
   1         MAX_NO_ARGS=     63,             ! Max number of macro arguments
   1         MAX_ARG_LIST=    65*MAX_NO_ARGS, ! Max characters in formal arg list
   1         MAX_REC_SIZE=    130;            ! Max input and output record length
   1
   1 MACRO
M  1         REPEAT=
   1             WHILE 1 DO %,
   1
   1         ! Construct length and pointer parameters
   1         !
M  1         CH$LEN_PTR[]=
   1             %CHARCOUNT(%REMAINING), CH$PTR(UPLIT(%REMAINING)) %,
   1
   1
   1         ! Return the index of string S in context C
   1         !
M  1         CH$INDEX(CL,C,S) =
   1             CH$FIND_SUB(CL, C, %CHARCOUNT(S), CH$PTR(UPLIT(S))) %,
   1
   1         ! Return the size of the zero-truncated output buffer
   1         !
M  1         TRUNCATED_OUTPUT =
M  1                 CH$DIFF(CH$FIND_CH( MAX_REC_SIZE+1, CH$PTR(OUTPUT_RECORD),0),
   1                         CH$PTR(OUTPUT_RECORD)) %;
   1
   1
   1 OWN
   1     !+
   1     ! Declarations for processing a text line for macro declaration and
   1     ! the associated argument list.
   1     !-
   1     INPUT_RECORD:       VECTOR[CH$ALLOCATION(MAX_REC_SIZE)],
   1     INPUT_PTR,
   1     INPUT_LENGTH,
   1
   1                         ! Guarantee at least 1 zero byte at end of output
   1                         !  record s.t. TRUNCATED_OUTPUT macro cannot fail.
   1                         !
   1     OUTPUT_RECORD:      VECTOR[CH$ALLOCATION(MAX_REC_SIZE+1)],
   1     OUTPUT_PTR,
   1
   1     ARG_PTR,
   1     ARG_LENGTH,
   1     ARG_LIST:   VECTOR[CH$ALLOCATION(MAX_ARG_LIST)],
   1
   1     CALL_PTR,
   1     CALL_LENGTH,
   1     CALL_LIST:  VECTOR[CH$ALLOCATION(MAX_ARG_LIST)],
   1
   1     VAR_ARGS;
   1
   1 OWN
   1     !+
;  126        0126  1      ! I/O related declarations.
;  127        0127  1      !-
;  128        0128  1
;  129        0129  1      TERMINAL:    $XPO_IOB(),
;  130        0130  1      INPUT:       $XPO_IOB(),
;  131        0131  1      OUTPUT:      $XPO_IOB();
;  133            0132   1 ROUTINE CONVERT =
;  134            0133   1 !++
;  135            0134   1 ! FUNCTIONAL DESCRIPTION:
;  136            0135   1 !       This is the main routine of this module.
;  137            0136   1 !       The chief function is to examine an input line and determine
;  138            0137   1 !       whether it should be ignored or processed by other routines.
;  139            0138   1 !
;  140            0139   1 ! IMPLICIT INPUTS:
;  141            0140   1 !
;  142            0141   1 !       OWN storage
;  143            0142   1 !
;  144            0143   1 ! IMPLICIT OUTPUTS:
;  145            0144   1 !
;  146            0145   1 !       OWN storage
;  147            0146   1 !
;  148            0147   1 ! ROUTINE VALUE:
;  149            0148   1 !
;  150            0149   1 !       Success or an XPORT completion code
;  151            0150   1 !--
;  152            0151   2     BEGIN
;  153            0152   2     LOCAL
;  154            0153   2         PRINT_COMMENTS; ! Flag to pass comments and blank lines to output
;  155            0154   2
;  156            0155   2     $XPO_IOB_INIT(IOB=TERMINAL);
;  157            0156   2     $XPO_IOB_INIT(IOB=INPUT);
;  158            0157   2     $XPO_IOB_INIT(IOB=OUTPUT);
;  159            0158   2
;  160            0159   2     $XPO_OPEN( IOB=TERMINAL, FILE_SPEC=$XPO_INPUT);
;  161            0160   2 !    $XPO_PUT( IOB=TERMINAL,
;  162            0161   2 !       STRING=(%STRING('System-Service Macro Translator ',%EXPAND VERSTR)) );
;  163            0162   2
;  164            0163   2     REPEAT
;  165            0164   3         BEGIN
;  166            0165   4         IF NOT $XPO_GET(IOB=TERMINAL, PROMPT=('Input file (STARLET.MAR): ') )
;  167            0166   3         THEN
;  168            0167   3             RETURN XPO$_NORMAL;
;  169            0168   3
;  170          P 0169   3         IF $XPO_OPEN(IOB=INPUT,
;  171          P 0170   3                 FILE_SPEC=TERMINAL[IOB$T_STRING],        ! User supplied name
;  172          P 0171   3                 DEFAULT=('STARLET.MAR'),                 ! The standard input
;  173            0172   4                 FAILURE=XPO$IO_FAILURE)
;  174            0173   3         THEN
;  175            0174   3             EXITLOOP                                     ! Got good input.
;  176            0175   2         END;
;  177            0176   2
;  178            0177   3     IF NOT $XPO_GET(IOB=TERMINAL, PROMPT=('Output file (*.B32): ') )
;  179            0178   2     THEN
;  180            0179   2         RETURN XPO$_NORMAL;
;  181            0180   2
;  182          P 0181   2     $XPO_OPEN(IOB=OUTPUT,
;  183          P 0182   2                 FILE_SPEC=TERMINAL[IOB$T_STRING],
;  184          P 0183   2                 DEFAULT=('*.B32'),
;  185          P 0184   2                 RELATED=INPUT[IOB$T_RESULTANT],
;  186            0185   2                 OPTION=OUTPUT);
;  187            0186   2
;  188          P 0187   2     $XPO_PUT(IOB=OUTPUT,
2            STRING=(%STRING('! Translated from MACRO-32 by ',%EXPAND VERSTR)) );
2          ! Set CSP pointer for the output record.
2          !
2        OUTPUT_PTR = CH$PTR(OUTPUT_RECORD);
2        PRINT_COMMENTS = 0;
2
2
2          ! Main loop:
2          !   Exit from this loop when an end of file is read
2          !   or an I/O error has occurred.
2          !
2        WHILE $XPO_GET(IOB=INPUT) DO
3            BEGIN
3            INPUT_LENGTH = .INPUT[IOB$H_STRING];
3            INPUT_PTR = .INPUT[IOB$A_STRING];
3
3            IF .INPUT_LENGTH LSS 0 THEN EXITLOOP;
3
3            IF .INPUT_LENGTH EQL 0
3            THEN
4                BEGIN
5                IF .PRINT_COMMENTS THEN $XPO_PUT(IOB=OUTPUT, STRING=('') )
4                END
3            ELSE
4                BEGIN
4                CH$COPY(.INPUT_LENGTH, .INPUT_PTR, 0, MAX_REC_SIZE, .OUTPUT_PTR);
4
4                INPUT_LENGTH = TRUNCATED_OUTPUT;
4
4                IF CH$RCHAR(.OUTPUT_PTR) EQL %C';'
4                THEN
5                    BEGIN
5                    !
5                    ! Comment line
5                    !       Note comments are printed only after line ";*" is read
5                    !
5                    CH$WCHAR(%C'!', .OUTPUT_PTR);
5                    IF .PRINT_COMMENTS
5                    THEN
5                        $XPO_PUT(IOB=OUTPUT, STRING=(.INPUT_LENGTH, .OUTPUT_PTR));
5
5                    IF CH$RCHAR(CH$PLUS(.OUTPUT_PTR, 1)) EQL %C'*'
5                    THEN
5                        PRINT_COMMENTS = 1
5                    END
5
4                ELSE IF (CH$INDEX(.INPUT_LENGTH, .OUTPUT_PTR, '.MACRO')) NEQ 0
4                THEN
4                    IF (CH$INDEX(.INPUT_LENGTH, .OUTPUT_PTR, '_S')) NEQ 0
4                    THEN
4                        !
4                        ! Macro in "_S" form:  Output it
4                        !
4                        CONVMACRO()
4                END
2            END;
2
```

```
;  246          0245  2
;  247          0246  2       $XPO_CLOSE(IOB=INPUT);
;  248          0247  2       $XPO_CLOSE(IOB=OUTPUT);
;  249          0248  2
;  250          0249  2 !      $XPO_PUT( IOB=TERMINAL, STRING=('End MARBLI') );
;  251          0250  2       $XPO_CLOSE( IOB=TERMINAL );
;  252          0251  2
;  253          0252  2       XPO$_NORMAL
;  254          0253  1       END;


                                                                                .TITLE  MARBLI MARS to BLISS Macro Converter
                                                                                .IDENT  \V04-000\

                                                                                .PSECT  $PLIT$,NOWRT,NOEXE,2

                        54  55  50  4E  49  24  53  59  53  00000 P.AAA:  .ASCII  \SYS$INPUT\
41  54  53  28  20  65  6C  69  66  20  74  75  70  6E  49  00009 P.AAB:  .ASCII  \Input file (STARLET.MAR): \
                20  3A  29  52  41  4D  2E  54  45  4C  52  00018
                52  41  4D  2E  54  45  4C  52  41  54  53  00023 P.AAC:  .ASCII  \STARLET.MAR\
2E  2A  28  20  65  6C  69  66  20  74  75  70  74  75  4F  0002E P.AAD:  .ASCII  \Output file (*.B32): \
                                    20  3A  29  32  33  42  0003D
                                        32  33  42  2E  2A  00043 P.AAE:  .ASCII  \*.B32\
72  66  20  64  65  74  61  6C  73  6E  61  72  54  20  21  00048 P.AAF:  .ASCII  \! Translated from MACRO-32 by MARBLI V03\
20  79  62  20  32  33  2D  4F  52  43  41  4D  20  6D  6F  00057
                    33  30  56  20  49  4C  42  52  41  4D  00066
                                            31  30  30  2D  00070         .ASCII  \-001\
                                                            00074 P.AAG:  .BLKB   0
                            00  00  4F  52  43  41  4D  2E  00074 P.AAH:  .ASCII  \.MACRO\<0><0>
                                            00  00  53  5F  0007C P.AAI:  .ASCII  \_S\<0><0>

                                                                          .PSECT  $OWN$,NOEXE,2

                                                            00000 INPUT_RECORD:
                                                                          .BLKB   132
                                                            00084 INPUT_PTR:
                                                                          .BLKB   4
                                                            00088 INPUT_LENGTH:
                                                                          .BLKB   4
                                                            0008C OUTPUT_RECORD:
                                                                          .BLKB   132
                                                            00110 OUTPUT_PTR:
                                                                          .BLKB   4
                                                            00114 ARG_PTR:.BLKB   4
                                                            00118 ARG_LENGTH:
                                                                          .BLKB   4
                                                            0011C ARG_LIST:
                                                                          .BLKB   4096
                                                            0111C CALL_PTR:
                                                                          .BLKB   4
                                                            01120 CALL_LENGTH:
                                                                          .BLKB   4
                                                            01124 CALL_LIST:
                                                                          .BLKB   4096
                                                            02124 VAR_ARGS:
                                                                          .BLKB   4
                                                            02128 TERMINAL:
```

```
                              .BLKB   244
               0221C INPUT:   .BLKB   244
               02310 OUTPUT:  .BLKB   244
         0009  02404 $IOB$FILE_SPEC:
                              .WORD   9
      01   0E  02406          .BYTE   14, 1
     00000000' 02408          .ADDRESS P.AAA
         001A  0240C $IOB$PROMPT:
                              .WORD   26
      01   0E  0240E          .BYTE   14, 1
     00000000' 02410          .ADDRESS P.AAB
         000B  02414 $IOB$DEFAULT:
                              .WORD   11
      01   0E  02416          .BYTE   14, 1
     00000000' 02418          .ADDRESS P.AAC
         0015  0241C $IOB$PROMPT:
                              .WORD   21
      01   0E  0241E          .BYTE   14, 1
     00000000' 02420          .ADDRESS P.AAD
         0005  02424 $IOB$DEFAULT:
                              .WORD   5
      01   0E  02426          .BYTE   14, 1
     00000000' 02428          .ADDRESS P.AAE
         002C  0242C $IOB$OUTPUT:
                              .WORD   44
      01   0E  0242E          .BYTE   14, 1
     00000000' 02430          .ADDRESS P.AAF
         0000  02434 $IOB$OUTPUT:
                              .WORD   0
      01   0E  02436          .BYTE   14, 1
     00000000' 02438          .ADDRESS P.AAG

                     IOB$=                TERMINAL
                     IOB$RESULTANT=       TERMINAL+28
                     IOB$=                INPUT
                     IOB$RESULTANT=       INPUT+28
                     IOB$=                OUTPUT
                     IOB$RESULTANT=       OUTPUT+28
                     IOB$=                TERMINAL
                     IOB$=                TERMINAL
                     IOB$=                INPUT
                     $IOB$FILE_SPEC=      TERMINAL+52
                     IOB$=                TERMINAL
                     IOB$=                OUTPUT
                     $IOB$FILE_SPEC=      TERMINAL+52
                     $IOB$RELATED=        INPUT+28
                     IOB$=                OUTPUT
                     IOB$=                INPUT
                     IOB$=                OUTPUT
                     IOB$=                OUTPUT
                     IOB$=                INPUT
                     IOB$=                OUTPUT
                     IOB$=                TERMINAL
                              .EXTRN  XPO$OPEN, XPO$FAILURE
                              .EXTRN  XST$FREE_TEMP, XPO$GET
                              .EXTRN  XPO$IO_FAILURE, XPO$PUT
                              .EXTRN  XPO$CLOSE
```

```
                                                                             .PSECT  $CODE$,NOWRT,2

                                                          0FFC 00000 CONVERT:.WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11         ; 0132
                                          5B 00000000G  EF  9E 00002         MOVAB   XPO$GET, R11
                                          5A 00000000G  EF  9E 00009         MOVAB   XPO$OPEN, R10
                                          59 00000000G  EF  9E 00010         MOVAB   XPO$FAILURE, R9
                                          58     0000'  CF  9E 00017         MOVAB   IOB$, R8
                                          5E            08  C2 0001C         SUBL2   #8, SP
    00F4  8F            00                6E            00  2C 0001F         MOVC5   #0, (SP), #0, #244, IOB$                     ; 0155
                                                  FE18  C8     00026
                                    FE18  C8  0301003D  8F  D0 00029         MOVL    #50397245, IOB$
                                    FE36  C8      020E  8F  B0 00032         MOVW    #526, IOB$RESULTANT+2
    00F4  8F            00                6E            00  2C 00039         MOVC5   #0, (SP), #0, #244, IOB$                     ; 0156
                                                  FF0C  C8     00040
                                    FF0C  C8  0301003D  8F  D0 00043         MOVL    #50397245, IOB$
                                    FF2A  C8      020E  8F  B0 0004C         MOVW    #526, IOB$RESULTANT+2
    00F4  8F            00                6E            00  2C 00053         MOVC5   #0, (SP), #0, #244, IOB$                     ; 0157
                                                        68     0005A
                                          68  0301003D  8F  D0 0005B         MOVL    #50397245, IOB$
                                      1E  A8      020E  8F  B0 00062         MOVW    #526, IOB$RESULTANT+2
                                    FE1C  C8      00F4  C8  9E 00068         MOVAB   $IOB$FILE_SPEC, IOB$+4                       ; 0159
                                    FE44  C8            01  90 0006F         MOVB    #1, IOB$+44
                                                        59  DD 00074         PUSHL   R9
                                                        7E  D4 00076         CLRL    -(SP)
                                                  FE18  C8  9F 00078         PUSHAB  IOB$
                                          6A            03  FB 0007C         CALLS   #3, XPO$OPEN
                                          50      FE3C  C8  D0 0007F 1$:     MOVL    IOB$+36, R0                                  ; 0165
                                                        09  13 00084         BEQL    2$
                                                        50  DD 00086         PUSHL   R0
                               00000000G  EF            01  FB 00088         CALLS   #1, XST$FREE_TEMP
                                    FE3C  C8      00FC  C8  9E 0008F 2$:     MOVAB   $IOB$PROMPT, IOB$+36
                                    FE44  C8            06  90 00096         MOVB    #6, IOB$+44
                                                        59  DD 0009B         PUSHL   R9
                                                        7E  D4 0009D         CLRL    -(SP)
                                                  FE18  C8  9F 0009F         PUSHAB  IOB$
                                          6B            03  FB 000A3         CALLS   #3, XPO$GET
                                          4C            50  E9 000A6         BLBC    R0, 4$
                                    FF10  C8      FE4C  C8  9E 000A9         MOVAB   $IOB$FILE_SPEC, IOB$+4                       ; 0172
                                    FF14  C8      0104  C8  9E 000B0         MOVAB   $IOB$DEFAULT, IOB$+8
                                    FF38  C8            01  90 000B7         MOVB    #1, IOB$+44
                                             00000000G  EF  9F 000BC         PUSHAB  XPO$IO_FAILURE
                                                        7E  D4 000C2         CLRL    -(SP)
                                                  FF0C  C8  9F 000C4         PUSHAB  IOB$
                                          6A            03  FB 000C8         CALLS   #3, XPO$OPEN
                                          B1            50  E9 000CB         BLBC    R0, 1$
                                          50      FE3C  C8  D0 000CE         MOVL    IOB$+36, R0                                  ; 0177
                                                        09  13 000D3         BEQL    3$
                                                        50  DD 000D5         PUSHL   R0
                               00000000G  EF            01  FB 000D7         CALLS   #1, XST$FREE_TEMP
                                    FE3C  C8      010C  C8  9E 000DE 3$:     MOVAB   $IOB$PROMPT, IOB$+36
                                    FE44  C8            06  90 000E5         MOVB    #6, IOB$+44
                                                        59  DD 000EA         PUSHL   R9
                                                        7E  D4 000EC         CLRL    -(SP)
                                                  FE18  C8  9F 000EE         PUSHAB  IOB$
                                          6B            03  FB 000F2         CALLS   #3, XPO$GET
                                          03            50  E8 000F5 4$:     BLBS    R0, 5$
```

```
                                               015A  31 000F8       BRW     18$                                   :
                               04   A8   FE4C    C8  9E 000FB 5$:   MOVAB   $IOB$FILE_SPEC, IOB$+4                : 0185
                               08   A8   0114    C8  9E 00101       MOVAB   $IOB$DEFAULT, IOB$+8                  :
                               0C   A8   FF28    C8  9E 00107       MOVAB   $IOB$RELATED, IOB$+12                 :
                               2E   A8           02  88 0010D       BISB2   #2, IOB$+46                           :
                               2C   A8           01  90 00111       MOVB    #1, IOB$+44                           :
                                                 59  DD 00115       PUSHL   R9                                    :
                                                 7E  D4 00117       CLRL    -(SP)                                 :
                                                 58  DD 00119       PUSHL   R8                                    :
                                    6A           03  FB 0011B       CALLS   #3, XPO$OPEN                          :
                               44   A8   011C    C8  9E 0011E       MOVAB   $IOB$OUTPUT, IOB$+68                  : 0188
                               2C   A8           07  90 00124       MOVB    #7, IOB$+44                           :
                                                 59  DD 00128       PUSHL   R9                                    :
                                                 7E  D4 0012A       CLRL    -(SP)                                 :
                                                 58  DD 0012C       PUSHL   R8                                    :
                        00000000G   EF           03  FB 0012E       CALLS   #3, XPO$PUT                           :
                             DE00   C8   DD7C    C8  9E 00135       MOVAB   OUTPUT_RECORD, OUTPUT_PTR             : 0191
                                                 57  D4 0013C       CLRL    PRINT_COMMENTS                        : 0192
                             FF38   C8           06  90 0013E 6$:   MOVB    #6, IOB$+44                           : 0199
                                                 59  DD 00143       PUSHL   R9                                    :
                                                 7E  D4 00145       CLRL    -(SP)                                 :
                                         FF0C    C8  9F 00147       PUSHAB  IOB$                                  :
                                    6B           03  FB 0014B       CALLS   #3, XPO$GET                           :
                                    03           50  E8 0014E       BLBS    R0, 8$                                :
                                               00C8  31 00151 7$:   BRW     17$                                   :
                             DD78   C8   FF40    C8  3C 00154 8$:   MOVZWL  INPUT+52, INPUT_LENGTH                : 0201
                             DD74   C8   FF44    C8  D0 0015B       MOVL    INPUT+56, INPUT_PTR                   : 0202
                                    50   DD78    C8  D0 00162       MOVL    INPUT_LENGTH, R0                      : 0204
                                                 E8  19 00167       BLSS    7$                                    :
                                                 1C  12 00169       BNEQ    10$                                   : 0206
                                    D0           57  E9 0016B       BLBC    PRINT_COMMENTS, 6$                    : 0209
                               44   A8   0124    C8  9E 0016E       MOVAB   $IOB$OUTPUT, IOB$+68                  :
                               2C   A8           07  90 00174       MOVB    #7, IOB$+44                           :
                                                 59  DD 00178       PUSHL   R9                                    :
                                                 7E  D4 0017A       CLRL    -(SP)                                 :
                                                 58  DD 0017C       PUSHL   R8                                    :
                        00000000G   EF           03  FB 0017E       CALLS   #3, XPO$PUT                           :
                                                 B7  11 00185 9$:   BRB     6$                                    : 0208
                                    56   DE00    C8  D0 00187 10$:  MOVL    OUTPUT_PTR, R6                        : 0213
 0082   8F          00     DD74     D8           50  2C 0018C       MOVC5   R0, @INPUT_PTR, #0, #130, (R6)        :
                                                 66     00195                                                 :
           DD7C   C8     0083     8F           00  3A 00196       LOCC    #0, #131, OUTPUT_RECORD               : 0215
                                                 02  12 0019E       BNEQ    11$                                   :
                                                 51  D4 001A0       CLRL    R1                                    :
                                    50   DD7C    C8  9E 001A2 11$:  MOVAB   OUTPUT_RECORD, R0                     :
           DD78   C8                51           50  C3 001A7       SUBL3   R0, R1, INPUT_LENGTH                  :
                                    3B           66  91 001AD       CMPB    (R6), #59                             : 0217
                                    3C           12 001B0           BNEQ    13$                                   :
                                    66           21  90 001B2       MOVB    #33, (R6)                             : 0224
                                    26           57  E9 001B5       BLBC    PRINT_COMMENTS, 12$                   : 0225
                                    6E   DD78    C8  B0 001B8       MOVW    INPUT_LENGTH, $IOB$OUTPUT             : 0227
                               02   AE           0E  90 001BD       MOVB    #14, $IOB$OUTPUT+2                    :
                               03   AE           01  90 001C1       MOVB    #1, $IOB$OUTPUT+3                     :
                               04   AE           56  D0 001C5       MOVL    R6, $IOB$OUTPUT+4                     :
                               44   A8           6E  9E 001C9       MOVAB   $IOB$OUTPUT, IOB$+68                  :
                               2C   A8           07  90 001CD       MOVB    #7, IOB$+44                           :
                                                 59  DD 001D1       PUSHL   R9                                    :
```

```
                                                7E  D4 001D3        CLRL     -(SP)                                     ;
                                                58  DD 001D5        PUSHL    R8                                        ;
                           00000000G  EF        03  FB 001D7        CALLS    #3, XPO$PUT                               ;
                                      50  DE00  C8  D0 001DE 12$:   MOVL     OUTPUT_PTR, R0                            ; 0229
                                      2A    01  A0  91 001E3        CMPB     1(R0), #42                                ;
                                                9C  12 001E7        BNEQ     9$                                        ;
                                      57        01  D0 001E9        MOVL     #1, PRINT_COMMENTS                        ; 0231
                                                97  11 001EC        BRB      9$                                        ; 0229
        66     DD78    C8      0000'  CF        06  39 001EE 13$:   MATCHC   #6, P.AAH, INPUT_LENGTH, (R6)             ; 0234
                                                03  13 001F7        BEQL     14$                                       ;
                                      53        06  D0 001F9        MOVL     #6, R3                                    ;
                                      53        06  C2 001FC 14$:   SUBL2    #6, R3                                    ;
                                                84  13 001FF        BEQL     9$                                        ;
        66     DD78    C8      0000'  CF        02  39 00201        MATCHC   #2, P.AAI, INPUT_LENGTH, (R6)             ; 0236
                                                03  13 0020A        BEQL     15$                                       ;
                                      53        02  D0 0020C        MOVL     #2, R3                                    ;
                                      53        02  C2 0020F 15$:   SUBL2    #2, R3                                    ;
                                                05  13 00212        BEQL     16$                                       ;
                               0000V  CF        00  FB 00214        CALLS    #0, CONVMACRO                             ; 0241
                                              FF22  31 00219 16$:   BRW      6$                                        ; 0206
                                FF38  C8        02  90 0021C 17$:   MOVB     #2, IOB$+44                               ; 0246
                                                59  DD 00221        PUSHL    R9                                        ;
                                                7E  D4 00223        CLRL     -(SP)                                     ;
                                          FF0C  C8  9F 00225        PUSHAB   IOB$                                      ;
                           00000000G  EF        03  FB 00229        CALLS    #3, XPO$CLOSE                             ;
                                  2C  A8        02  90 00230        MOVB     #2, IOB$+44                               ; 0247
                                                59  DD 00234        PUSHL    R9                                        ;
                                                7E  D4 00236        CLRL     -(SP)                                     ;
                                                58  DD 00238        PUSHL    R8                                        ;
                           00000000G  EF        03  FB 0023A        CALLS    #3, XPO$CLOSE                             ;
                                FE44  C8        02  90 00241        MOVB     #2, IOB$+44                               ; 0250
                                                59  DD 00246        PUSHL    R9                                        ;
                                                7E  D4 00248        CLRL     -(SP)                                     ;
                                          FE18  C8  9F 0024A        PUSHAB   IOB$                                      ;
                           00000000G  EF        03  FB 0024E        CALLS    #3, XPO$CLOSE                             ;
                                      50 00208001  8F  D0 00255 18$:   MOVL     #2129921, R0                           ; 0253
                                                    04 0025C        RET                                                ;

; Routine Size:  605 bytes,    Routine Base:  $CODE$ + 0000
```

```
1 ROUTINE CONVMACRO: NOVALUE=
1
1 !++
1 ! FUNCTIONAL DESCRIPTION:
1 !             This routine reads and processes a MARS system macro
1 !             It calls the routine CONVARGLIST to convert the argument list
1 !             of the macro definition.
1 !
1 ! PARAMETERS:
1 !
1 !           NONE
1 !
1 ! ROUTINE VALUE:
1 !
1 !           NONE
1 !
1 !--
1
2       BEGIN
2       LOCAL
2           PREFIX_PTR,
2           PTR,                        ! Temp CH$ pointer for copying arglists
2           TEMP_PTR1,
2           TEMP_PTR2,
2           TEMPSTRING:     VECTOR[CH$ALLOCATION(80)],
2           MACRO_PTR,
2           MACRO_LENGTH,
2           MACRO_NAME:     VECTOR[CH$ALLOCATION(31)];
2
2
2       MACRO_PTR = CH$PTR(MACRO_NAME);
2
2
2       ! If the .MACRO line contains the string "CJF$", then change the routine
2       ! name prefix from SYS$ to CJF$.  Do the same for RUF.
2       !
2       PREFIX_PTR = CH$PTR(UPLIT BYTE('SYS'));
2       IF CH$FIND_SUB(MAX_REC_SIZE, .OUTPUT_PTR, CH$LEN_PTR('CJF$')) NEQ 0
2           THEN PREFIX_PTR = CH$PTR(UPLIT BYTE('CJF'));
2       IF CH$FIND_SUB(MAX_REC_SIZE, .OUTPUT_PTR, CH$LEN_PTR('RUF$')) NEQ 0
2           THEN PREFIX_PTR = CH$PTR(UPLIT BYTE('RUF'));
2
2
2       ! Search for the "$" which begins the macro name and
2       ! the "_" which ends it, and initialize MACRO_NAME and MACRO_LENGTH
2       !
2       TEMP_PTR1 = CH$FIND_CH(MAX_REC_SIZE, .OUTPUT_PTR, %C'$');
2       TEMP_PTR2 = CH$FIND_CH(MAX_REC_SIZE, .OUTPUT_PTR, %C'_');
2       MACRO_LENGTH = CH$DIFF(.TEMP_PTR2, .TEMP_PTR1);
2       CH$MOVE(.MACRO_LENGTH, .TEMP_PTR1, .MACRO_PTR);
2
2
2       ! Inform user of progress
2       !
2 !      CH$COPY(CH$LEN_PTR('Macro: '),
2 !             .MACRO_LENGTH, .MACRO_PTR,
2 !              0,
:   313        0311  2 !          80, CH$PTR(TEMPSTRING) );
:   314        0312  2
:   315        0313  2 !     $XPO_PUT( IOB=TERMINAL, STRING=(80, CH$PTR(TEMPSTRING) ) );
:   316        0314  2
:   317        0315  2
:   318        0316  2      ! Gather the argument list
:   319        0317  2      !
:   320        0318  2      CONVARGLIST(.TEMP_PTR2);
:   321        0319  2
:   322        0320  2
:   323        0321  2      ! Put out one of the lines
:   324        0322  2      !    "KEYWORDMACRO $name(formal=default,...)="
:   325        0323  2      ! or
:   326        0324  2      !    "MACRO $name[]="          if VAR_ARGS is true
:   327        0325  2      !
:   328        0326  2      IF .VAR_ARGS
:   329        0327  2      THEN
:   330        0328  2          CH$COPY(
:   331        0329  2              CH$LEN_PTR('MACRO '),
:   332        0330  2              .MACRO_LENGTH,
:   333        0331  2              .MACRO_PTR,
:   334        0332  2              CH$LEN_PTR('[]='),
:   335        0333  2              0,
:   336        0334  2              MAX_REC_SIZE,
:   337        0335  2              .OUTPUT_PTR)
:   338        0336  2      ELSE
:   339        0337  3          BEGIN
:   340        0338  3          LOCAL
:   341        0339  3              PTR;
:   342        0340  3
:   343        0341  3          PTR = CH$MOVE(CH$LEN_PTR('KEYWORDMACRO '), .OUTPUT_PTR);
:   344        0342  3          PTR = CH$MOVE(.MACRO_LENGTH, .MACRO_PTR, .PTR);
:   345        0343  3
:   346        0344  3          IF .ARG_LENGTH GTR 0               ! If there are formal parameters, then
:   347        0345  3          THEN                               !  put out the argument list.
:   348        0346  4              BEGIN
:   349        0347  4              PTR = CH$MOVE( CH$LEN_PTR('('), .PTR );
:   350        0348  4              PTR = OUTLIST( .PTR, .ARG_LENGTH, .ARG_PTR);
:   351        0349  4              PTR = CH$MOVE( CH$LEN_PTR(')='), .PTR)
:   352        0350  4              END
:   353        0351  3          ELSE
:   354        0352  3              CH$WCHAR_A(%C'=', PTR);        ! There were no formal parameters
:   355        0353  3
:   356        0354  3          CH$WCHAR(0, .PTR)                  ! Mark end of string
:   357        0355  2          END;
:   358        0356  2
:   359        0357  2
:   360      P 0358  2      $XPO_PUT(IOB=OUTPUT,
:   361        0359  2              STRING=(TRUNCATED_OUTPUT, .OUTPUT_PTR) );
:   362        0360  2
:   363        0361  2
:   364        0362  2      ! Put out the line "   ("
:   365        0363  2      !
:   366        0364  2      $XPO_PUT(IOB=OUTPUT, STRING=('    (') );
:   367        0365  2
:   368        0366  2
:   369        0367  2      ! Put out the line "    EXTERNAL ROUTINE SYS$name: BLISS ADDRESSING_MODE(GENERAL);"
```

```
;   2      !
;   2      CH$COPY(
;   2              CH$LEN_PTR('     EXTERNAL ROUTINE '),
;   2              3, .PREFIX_PTR,
;   2              .MACRO_LENGTH,
;   2              .MACRO_PTR,
;   2              CH$LEN_PTR(': BLISS ADDRESSING_MODE(GENERAL);'),
;   2              0,
;   2              MAX_REC_SIZE,
;   2              .OUTPUT_PTR);
;   2      $XPO_PUT(IOB=OUTPUT, STRING=(TRUNCATED_OUTPUT, .OUTPUT_PTR) );
;   2
;   2      !
;   2      ! Put out the line "     SYS$name(formal,...)"
;   2      !
;   2      PTR = CH$COPY(
;   2              CH$LEN_PTR('      '),
;   2              3, .PREFIX_PTR,
;   2              .MACRO_LENGTH,
;   2              .MACRO_PTR,
;   2              CH$LEN_PTR('('),
;   2              0,
;   2              .MACRO_LENGTH + 8,          ! Exact copying
;   2              .OUTPUT_PTR);
;   2
;   2      PTR = OUTLIST( .PTR, .CALL_LENGTH, .CALL_PTR);
;   2      PTR = CH$MOVE( CH$LEN_PTR( ')', %CHAR(0) ), .PTR );
;   2
;   2
;   2      $XPO_PUT( IOB=OUTPUT, STRING=(TRUNCATED_OUTPUT, .OUTPUT_PTR) );
;   2
;   2      !
;   2      ! Close up the macro declaration
;   2      !
;   3      $XPO_PUT(IOB=OUTPUT, STRING=('     ) %;') )
;   1      END;


                                                        .PSECT  $PLIT$,NOWRT,NOEXE,2

                                  53  59  53  00080 P.AAJ:  .ASCII  \SYS\                             ;
                                              00083         .BLKB   1
                              24  46  4A  43  00084 P.AAK:  .ASCII  \CJF$\                            ;
                                  46  4A  43  00088 P.AAL:  .ASCII  \CJF\                             ;
                                              0008B         .BLKB   1
                              24  46  55  52  0008C P.AAM:  .ASCII  \RUF$\                            ;
                                  46  55  52  00090 P.AAN:  .ASCII  \RUF\                             ;
                                              00093         .BLKB   1
              00  00  20  4F  52  43  41  4D  00094 P.AAO:  .ASCII  \MACRO \<0><0>                    ;
                              00  3D  5D  5B  0009C P.AAP:  .ASCI!  \[]=\<0>                          ;
00  00  20  4F  52  43  41  4D  44  52  4F  57  59  45  4B  000A0 P.AAQ:  .ASCII  \KEYWORDMACRO \<0><0><0>  ;
                                          00  000AF                                                   ;
                              00  00  00  28  000B0 P.AAR:  .ASCII  \(\<0><0><0>                      ;
                              00  00  3D  29  000B4 P.AAS:  .ASCII  \)=\<0><0>                        ;
                          28  20  20  20  20  000B8 P.AAT:  .ASCII  \    (\                           ;
                                              000BD         .BLKB   3
```

```
4F 52 20 4C 41 4E 52 45 54 58 45 20 20 20 20 000C0 P.AAU:  .ASCII  \    EXTERNAL ROUTINE \<0><0><0>                    :
                  00 00 00 20 45 4E 49 54 55 000CF                                                                       :
53 53 45 52 44 44 41 20 53 53 49 4C 42 20 3A 000D8 P.AAV:  .ASCII  \: BLISS ADDRESSING_MODE(GENERAL);\<0><0>             :
41 52 45 4E 45 47 28 45 44 4F 4D 5F 47 4E 49 000E7                                                                       :
                              00 00 3B 29 4C 000F6                                                                       :
                                          00 000FB          .ASCII  <0>                                                  :
                                 20 20 20 20 000FC P.AAW:   .ASCII  \    \                                               :
                                 00 00 00 28 00100 P.AAX:   .ASCII  \(\<0><0><0>                                         :
                                 00 00 00 29 00104 P.AAY:   .ASCII  \)\<0><0><0>                                         :
                                 00 00 00 00 00108          .ASCII  <0><0><0><0>                                         :
                     3B 25 20 29 20 20 20 20 0010C P.AAZ:   .ASCII  \    ) %;\                                           :

                                                            .PSECT  $OWN$,NOEXE,2

                                       0005  02.3C $IOB$OUTPUT:
                                                            .WORD   5                                                    :
                                    01  0E  0243E           .BYTE   14, 1                                                :
                                 00000000'  02440           .ADDRESS P.AAT                                               :
                                       0008  02444 $IOB$OUTPUT:
                                                            .WORD   8                                                    :
                                    01  0E  02446           .BYTE   14, 1                                                :
                                 00000000'  02448           .ADDRESS P.AAZ                                               :

                                                   IOB$=                  OUTPUT
                                                   IOB$=                  OUTPUT
                                                   IOB$=                  OUTPUT
                                                   IOB$=                  OUTPUT
                                                   IOB$=                  OUTPUT


                                                            .PSECT  $CODE$,NOWRT,2

                                        0FFC 00000 CONVMACRO:
                                                            .WORD   Save R2,R3,R4,R5,R6,R7,R8,R9,R10,R11             ; 0254
                          5B     0000'  CF  9E 00002        MOVAB   OUTPUT_PTR, R11                                  :
                          5E        88  AE  9E 00007        MOVAB   -120(SP), SP                                     :
                          59        08  AE  9E 0000B        MOVAB   MACRO_NAME, MACRO_PTR                            ; 0284
                          5A     0000'  CF  9E 0000F        MOVAB   P.AAJ, PREFIX_PTR                                ; 0290
                          54            6B  D0 00014        MOVL    OUTPUT_PTR, R4                                   ; 0291
     64    0082   8F   0000'  CF        04  39 00017        MATCHC  #4, P.AAK, #130, (R4)                            :
                                        03  13 00020        BEQL    1$                                               :
                          53            04  D0 00022        MOVL    #4, R3                                           :
                          53            04  C2 00025 1$:    SUBL2   #4, R3                                           :
                                        05  13 00028        BEQL    2$                                               :
                          5A     0000'  CF  9E 0002A        MOVAB   P.AAL, PREFIX_PTR                                ; 0292
     64    0082   8F   0000'  CF        04  39 0002F 2$:    MATCHC  #4, P.AAM, #130, (R4)                            ; 0293
                                        03  13 00038        BEQL    3$                                               :
                          53            04  D0 0003A        MOVL    #4, R3                                           :
                          53            04  C2 0003D 3$:    SUBL2   #4, R3                                           :
                                        05  13 00040        BEQL    4$                                               :
                          5A     0000'  CF  9E 00042        MOVAB   P.AAN, PREFIX_PTR                                ; 0294
               64    0082   8F          24  3A 00047 4$:    LOCC    #36, #130, (R4)                                  ; 0300
                                        02  12 0004D        BNEQ    5$                                               :
                                        51  D4 0004F        CLRL    R1                                               :
                          52            51  D0 00051 5$:    MOVL    R1, TEMP_PTR1                                    :
               64    0082   8F      5F  8F  3A 00054        LOCC    #95, #130, (R4)                                  ; 0301
                                        02  12 0005B        BNEQ    6$                                               :
```

```
                                                       51  D4 0005D       CLRL    R1                                        ;
                                       57              51  D0 0005F 6$:   MOVL    R1, TEMP_PTR2                             ;
                        56             57              52  C3 00062       SUBL3   TEMP_PTR1, TEMP_PTR2, MACRO_LENGTH        ; 0302
                        69             62              56  28 00066       MOVC3   MACRO_LENGTH, (TEMP_PTR1), (MACRO_PTR)    ; 0303
                                                       57  DD 0006A       PUSHL   TEMP_PTR2                                 ; 0318
                                0000V  CF              01  FB 0006C       CALLS   #1, CONVARGLIST                           ;
                                       2F        2014  CB  E9 00071       BLBC    VAR_ARGS, 7$                              ; 0326
                                       58          82  8F  9A 00076       MOVZBL  #130, R8                                  ; 0328
                                       57              6B  D0 0007A       MOVL    OUTPUT_PTR, R7                            ; 0335
          58            00      0000'  CF              06  2C 0007D       MOVC5   #6, P.AAO, #0, R8, (R7)                   ;
                                                       67     00084                                                         ;
                                                       4F  18 00085       BGEQ    10$                                       ;
                                       57              06  C0 00087       ADDL2   #6, R7                                    ;
                                       58              06  C2 0008A       SUBL2   #6, R8                                    ;
          58            00             69              56  2C 0008D       MOVC5   MACRO_LENGTH, (MACRO_PTR), #0, R8, (R7)   ;
                                                       67     00092                                                         ;
                                                       41  18 00093       BGEQ    10$                                       ;
                                       57              56  C0 00095       ADDL2   MACRO_LENGTH, R7                          ;
                                       58              56  C2 00098       SUBL2   MACRO_LENGTH, R8                          ;
          58            00      0000'  CF              03  2C 0009B       MOVC5   #3, P.AAP, #0, R8, (R7)                   ;
                                                       67     000A2                                                         ;
                                                       31  11 000A3       BRB     10$                                       ; 0328
                  00    BB      0000'  CF              0D  28 000A5 7$:   MOVC3   #13, P.AAQ, @OUTPUT_PTR                   ; 0341
                        63             69              56  28 000AC       MOVC3   MACRO_LENGTH, (MACRO_PTR), (PTR)          ; 0342
                                       50          08  AB  D0 000B0       MOVL    ARG_LENGTH, R0                            ; 0344
                                                       1B  15 000B4       BLEQ    8$                                        ;
                                       83       0000'  CF  90 000B6       MOVB    P.AAR, (PTR)+                             ; 0347
                                                   04  AB  DD 000BB       PUSHL   ARG_PTR                                   ; 0348
                                                       50  DD 000BE       PUSHL   R0                                        ;
                                                       53  DD 000C0       PUSHL   PTR                                       ;
                                0000V  CF              03  FB 000C2       CALLS   #3, OUTLIST                               ;
                                       53              50  D0 000C7       MOVL    R0, PTR                                   ;
                                       83       0000'  CF  B0 000CA       MOVW    P.AAS, (PTR)+                             ; 0349
                                                       03  11 000CF       BRB     9$                                        ; 0352
                                       83              3D  90 000D1 8$:   MOVB    #61, (PTR)+                               ;
                                                       63  94 000D4 9$:   CLRB    (PTR)                                     ; 0354
                FF7C    CB       0083  8F              00  3A 000D6 10$:  LOCC    #0, #131, OUTPUT_RECORD                   ; 0359
                                                       02  12 000DE       BNEQ    11$                                       ;
                                                       51  D4 000E0       CLRL    R1                                        ;
                                       50        FF7C  CB  9E 000E2 11$:  MOVAB   OUTPUT_RECORD, R0                         ;
                        6E             51              50  A3 000E7       SUBW3   R0, R1, $IOB$OUTPUT                       ;
                                   02  AE              0E  90 000EB       MOVB    #14, $IOB$OUTPUT+2                        ;
                                   03  AE              01  90 000EF       MOVB    #1, $IOB$OUTPUT+3                         ;
                                   04  AE              6B  D0 000F3       MOVL    OUTPUT_PTR, $IOB$OUTPUT+4                 ;
                                 2244  CB              6E  9E 000F7       MOVAB   $IOB$OUTPUT, IOB$+68                      ;
                                 222C  CB              07  90 000FC       MOVB    #7, IOB$+44                               ;
                                            00000000G  EF  9F 00101       PUSHAB  XPO$FAILURE                               ;
                                                       7E  D4 00107       CLRL    -(SP)                                     ;
                                                 2200  CB  9F 00109       PUSHAB  IOB$                                      ;
                            00000000G  EF              03  FB 0010D       CALLS   #3, XPO$PUT                               ;
                                 2244  CB        232C  CB  9E 00114       MOVAB   $IOB$OUTPUT, IOB$+68                      ; 0364
                                 222C  CB              07  90 0011B       MOVB    #7, IOB$+44                               ;
                                            00000000G  EF  9F 00120       PUSHAB  XPO$FAILURE                               ;
                                                       7E  D4 00126       CLRL    -(SP)                                     ;
                                                 2200  CB  9F 00128       PUSHAB  IOB$                                      ;
                            00000000G  EF              03  FB 0012C       CALLS   #3, XPO$PUT                               ;
                                       58          82  8F  9A 00133       MOVZBL  #130, R8                                  ; 0369
```

```
                                    57              6B  D0 00137       MOVL    OUTPUT_PTR, R7                            ; 0377
      58            00       0000'  CF              15  2C 0013A       MOVC5   #21, P.AAU, #0, R8, (R7)
                                                    67     00141
                                                    2A  18 00142       BGEQ    12$
                                    57              15  C0 00144       ADDL2   #21, R7
                                    58              15  C2 00147       SUBL2   #21, R8
      58            00              6A              03  2C 0014A       MOVC5   #3, (PREFIX_PTR), #0, R8, (R7)
                                                    67     0014F
                                                    1C  18 00150       BGEQ    12$
                                    57              03  C0 00152       ADDL2   #3, R7
                                    58              03  C2 00155       SUBL2   #3, R8
      58            00              69              56  2C 00158       MOVC5   MACRO_LENGTH, (MACRO_PTR), #0, R8, (R7)
                                                    67     0015D
                                                    0E  18 0015E       BGEQ    12$
                                    57              56  C0 00160       ADDL2   MACRO_LENGTH, R7
                                    58              56  C2 00163       SUBL2   MACRO_LENGTH, R8
      58            00       0000'  CF              21  2C 00166       MOVC5   #33, P.AAV, #0, R8, (R7)
                                                    67     0016D
            FF7C    CB        0083  8F              00  3A 0016E 12$:  LOCC    #0, #131, OUTPUT_RECORD                   ; 0378
                                                    02  12 00176       BNEQ    13$
                                                    51  D4 00178       CLRL    R1
                                    50        FF7C  CB  9E 0017A 13$:  MOVAB   OUTPUT_RECORD, R0
                    6E              51              50  A3 0017F       SUBW3   R0, R1, $IOB$OUTPUT
                                02  AE              0E  90 00183       MOVB    #14, $IOB$OUTPUT+2
                                03  AE              01  90 00187       MOVB    #1, $IOB$OUTPUT+3
                                04  AE              6B  D0 0018B       MOVL    OUTPUT_PTR, $IOB$OUTPUT+4
                              2244  CB              6E  9E 0018F       MOVAB   $IOB$OUTPUT, IOB$+68
                              222C  CB              07  90 00194       MOVB    #7, IOB$+44
                                         00000000G  EF  9F 00199       PUSHAB  XPO$FAILURE
                                                    7E  D4 0019F       CLRL    -(SP)
                                              2200  CB  9F 001A1       PUSHAB  IOB$
                         00000000G  EF              03  FB 001A5       CALLS   #3, XPO$PUT
                                    58          08  A6  9E 001AC       MOVAB   8(R6), R8                                 ; 0390
                                    57              6B  D0 001B0       MOVL    OUTPUT_PTR, R7                            ; 0391
      58            00       0000'  CF              04  2C 001B3       MOVC5   #4, P.AAW, #0, R8, (R7)
                                                    67     001BA
                                                    2A  18 001BB       BGEQ    14$
                                    57              04  C0 001BD       ADDL2   #4, R7
                                    58              04  C2 001C0       SUBL2   #4, R8
      58            00              6A              03  2C 001C3       MOVC5   #3, (PREFIX_PTR), #0, R8, (R7)
                                                    67     001C8
                                                    1C  18 001C9       BGEQ    14$
                                    57              03  C0 001CB       ADDL2   #3, R7
                                    58              03  C2 001CE       SUBL2   #3, R8
      58            00              69              56  2C 001D1       MOVC5   MACRO_LENGTH, (MACRO_PTR), #0, R8, (R7)
                                                    67     001D6
                                                    0E  18 001D7       BGEQ    14$
                                    57              56  C0 001D9       ADDL2   MACRO_LENGTH, R7
                                    58              56  C2 001DC       SUBL2   MACRO_LENGTH, R8
      58            00       0000'  CF              01  2C 001DF       MOVC5   #1, P.AAX, #0, R8, (R7)
                                                    67     001E6
                                              100C  CB  DD 001E7 14$:  PUSHL   CALL_PTR                                  ; 0393
                                              1010  CB  DD 001EB       PUSHL   CALL_LENGTH
                                                    53  DD 001EF       PUSHL   PTR
                             0000V  CF              03  FB 001F1       CALLS   #3, OUTLIST
                                    53              50  D0 001F6       MOVL    R0, PTR
                                    83       0000'  CF  B0 001F9       MOVW    F.AAY, (PTR)+                             ; 0394
```

```
                FF7C   CB     0083  8F              00  3A 001FE           LOCC     #0, #131, OUTPUT_RECORD                 ; 0397
                                                    02  12 00206           BNEQ     15$                                     ;
                                                    51  D4 00208           CLRL     R1                                      ;
                                    50      FF7C    CB  9E 0020A  15$:     MOVAB    OUTPUT_RECORD, R0                       ;
                       6E           51              50  A3 0020F           SUBW3    R0, R1, $IOB$OUTPUT                     ;
                                02  AE              0E  90 00213           MOVB     #14, $IOB$OUTPUT+2                      ;
                                03  AE              01  90 00217           MOVB     #1, $IOB$OUTPUT+3                       ;
                                04  AE              6B  D0 0021B           MOVL     OUTPUT_PTR, $IOB$OUTPUT+4               ;
                              2244  CB              6E  9E 0021F           MOVAB    $IOB$OUTPUT, IOB$+68                    ;
                              222C  CB              07  90 00224           MOVB     #7, IOB$+44                             ;
                                         00000000G  EF  9F 00229           PUSHAB   XPO$FAILURE                             ;
                                                    7E  D4 0022F           CLRL     -(SP)                                   ;
                                              2200  CB  9F 00231           PUSHAB   IOB$                                    ;
                         00000000G  EF              03  FB 00235           CALLS    #3, XPO$PUT                             ;
                              2244  CB        2334  CB  9E 0023C           MOVAB    $IOB$OUTPUT, IOB$+68                    ; 0402
                              222C  CB              07  90 00243           MOVB     #7, IOB$+44                             ;
                                         00000000G  EF  9F 00248           PUSHAB   XPO$FAILURE                             ;
                                                    7E  D4 0024E           CLRL     -(SP)                                   ;
                                              2200  CB  9F 00250           PUSHAB   IOB$                                    ;
                         00000000G  EF              03  FB 00254           CALLS    #3, XPO$PUT                             ;
                                                        04 0025B           RET                                              ; 0403

; Routine Size:  604 bytes,    Routine Base:  $CODE$ + 025D
;  407          0404   1 ROUTINE OUTLIST(BUFPTR, LEN, LPTR)=
;  408          0405   1 !+
;  409          0406   1 ! FUNCTION
;  410          0407   1 !       Dump an argument list buffer (which may span several source
;  411          0408   1 !       records..) to the output file.  Continuation lines are flagged
;  412          0409   1 !       by an ASCII NUL (0) byte.
;  413          0410   1 ! INPUTS
;  414          0411   1 !       BUFPTR  - byte-pointer into the OUTPUT_RECORD containing prefix
;  415          0412   1 !                 information for the first record written.
;  416          0413   1 !
;  417          0414   1 !       LEN     - Length of the argument-list string.
;  418          0415   1 !
;  419          0416   1 !       LPTR    - Pointer to the argument-list string.
;  420          0417   1 ! OUTPUT
;  421          0418   1 !       Updated 'BUFPTR''
;  422          0419   1 !-
;  423          0420   2   BEGIN
;  424          0421   2   LOCAL
;  425          0422   2       IPTR,           ! Input string pointer (arg-list)
;  426          0423   2       OPTR,           ! Copy of BUFPTR...
;  427          0424   2       CHAR;           ! Character temporary
;  428          0425   2
;  429          0426   2   IPTR = .LPTR;
;  430          0427   2   OPTR = .BUFPTR;
;  431          0428   2
;  432          0429   2   DECR I FROM .LEN-1 TO 0 DO
;  433          0430   3       BEGIN
;  434          0431   3       CHAR = CH$RCHAR_A( IPTR );      ! Get next character and copy to
;  435          0432   3       CH$WCHAR_A( .CHAR, OPTR );      !  output string
;  436          0433   3
;  437          0434   3       IF .CHAR EQL 0
;  438          0435   3       THEN
;  439          0436   4           BEGIN
;  440        P 0437   4           $XPO_PUT( IOB=OUTPUT,
;  441        P 0438   4                   STRING=( TRUNCATED_OUTPUT, .OUTPUT_PTR)
;  442          0439   4                   );
;  443          0440   4           OPTR = .OUTPUT_PTR;                 ! Restore buffer ptr.
;  444          0441   4           CH$WCHAR_A( %CHAR(9), OPTR )        !  and TAB from left-margin
;  445          0442   4           END
;  446          0443   2       END;
;  447          0444   2
;  448          0445   2   .OPTR
;  449          0446   1   END;



                                                 IOB$=                  OUTPUT


                                          003C 00000 OUTLIST:.WORD   Save R2,R3,R4,R5                                 ; 0404
                     5E               08   C2 00002          SUBL2   #8, SP
                     55        0C     AC   D0 00005          MOVL    LPTR, IPTR                                       ; 0426
                     52        04     AC   7D 00009          MOVQ    BUFPTR, OPTR                                     ; 0427
                                      52   11 0000D          BRB     3$                                               ; 0429
                     54               85   9A 0000F 1$:      MOVZBL  (IPTR)+, CHAR                                    ; 0431
                     82               54   90 00012          MOVB    CHAR, (OPTR)+                                    ; 0432
                                      54   D5 00015          TSTL    CHAR                                             ; 0434
```

```
                                        48  12 00017          BNEQ    3$                                      :
          0000'  CF     0083  8F                00  3A 00019          LOCC    #0, #131, OUTPUT_RECORD                 : 0439
                                        02  12 00021          BNEQ    2$                                      :
                                        51  D4 00023          CLRL    R1                                      :
                              50     0000'  CF  9E 00025 2$:      MOVAB   OUTPUT_RECORD, R0                       :
                 6E           51            50  A3 0002A          SUBW3   R0, R1, $IOB$OUTPUT                     :
                        02    AE            0E  90 0002E          MOVB    #14, $IOB$OUTPUT+2                      :
                        03    AE            01  90 00032          MOVB    #1, $IOB$OUTPUT+3                       :
                        04    AE     0000'  CF  D0 00036          MOVL    OUTPUT PTR, $IOB$OUTPUT+4               :
                     0000'    CF            6E  9E 0003C          MOVAB   $IOB$OUTPUT, IOB$+68                    :
                     0000'    CF            07  90 00041          MOVB    #7, IOB$+44                             :
                                 00000000G  EF  9F 00046          PUSHAB  XPO$FAILURE                             :
                                            7E  D4 0004C          CLRL    -(SP)                                   :
                                     0000'  CF  9F 0004E          PUSHAB  IOB$                                    :
                 00000000G    EF            03  FB 00052          CALLS   #3, XPO$PUT                             :
                              52     0000'  CF  D0 00059          MOVL    OUTPUT PTR, OPTR                        : 0440
                              82            09  90 0005E          MOVB    #9, (OPTR)+                             : C441
                              AB            53  F4 00061 3$:      SOBGEQ  I, 1$                                   : 0434
                              50            52  D0 00064          MOVL    OPTR, R0                                : 0446
                                                04 00067          RET                                             :

; Routine Size:  104 bytes,    Routine Base:  $CODE$ + 04B9
;   451          0447  1 ROUTINE CONVARGLIST(TEMP_PTR): NOVALUE=
;   452          0448  1
;   453          0449  1 !++
;   454          0450  1 ! FUNCTIONAL DESCRIPTION:
;   455          0451  1 !      This routine gathers the argument list of a macro definition.
;   456          0452  1 !      It processes continuation lines.  It eliminates unnecessary
;   457          0453  1 !      characters and places the arguments with default values in ARG_LIST
;   458          0454  1 !      and a list of the formal names in CALL_LIST
;   459          0455  1 !
;   460          0456  1 ! PARAMETERS:
;   461          0457  1 !
;   462          0458  1 !      TEMP_PTR          =  The value of a CH pointer in the macro
;   463          0459  1 !                           definition line.
;   464          0460  1 !
;   465          0461  1 ! IMPLICIT OUTPUTS:
;   466          0462  1 !      ARG_LIST          =  String of formal arguments with default values
;   467          0463  1 !      ARG_PTR           =  String pointer to ARG_LIST
;   468          0464  1 !      ARG_LENGTH        =  Length of string in ARG_LIST
;   469          0465  1 !      CALL_LIST         =  String of formal arguments
;   470          0466  1 !      CALL_PTR          =  String pointer to CALL_LIST
;   471          0467  1 !      CALL_LENGTH       =  Length of string in CALL_LIST
;   472          0468  1 !      VAR_ARGS          =  True if the last formal argument was END_VARNUM_ARGS
;   473          0469  1 !
;   474          0470  1 ! ROUTINE VALUE:
;   475          0471  1 !      NONE
;   476          0472  1 !
;   477          0473  1 !--
;   478          0474  1
;   479          0475  2     BEGIN
;   480          0476  2     LOCAL
;   481          0477  2         LIST_PTR,          ! Input character string pointer
;   482          0478  2         CHAR,              ! Character from string
;   483          0479  2         STATE,             ! State of parse
;   484          0480  2                            !       0 = No argument seen yet
;   485          0481  2                            !       1 = Scanning formal name
;   486          0482  2                            !       2 = Scanning default value
;   487          0483  2         BEGIN_ARG;         ! Character string pointer to beginning of argument
;   488          0484  2
;   489          0485  2     MACRO
;   490        M 0486  2         TRY_ADD_DEFAULT=
;   491          0487  2             IF .STATE EQL 1 THEN (CH$WCHAR_A(%C'=', ARG_PTR);  CH$WCHAR_A(%C'0', ARG_PTR)) %;
;   492          0488  2
;   493          0489  2
;   494          0490  2
;   495          0491  2     ! Initialize
;   496          0492  2     !
;   497          0493  2     ARG_PTR = CH$PTR(ARG_LIST);
;   498          0494  2     CH$FILL(0, MAX_ARG_LIST, .ARG_PTR);
;   499          0495  2     CALL_PTR = CH$PTR(CALL_LIST);
;   500          0496  2     CH$FILL(0, MAX_ARG_LIST, .CALL_PTR);
;   501          0497  2     LIST_PTR = CH$PLUS(.TEMP_PTR, 3);
;   502          0498  2     VAR_ARGS = 0;
;   503          0499  2     STATE = 0;
;   504          0500  2
;   505          0501  2
;   506          0502  2
;   507          0503  2     ! Scan the argument list
```

```
! Exit when an end of line (not preceded by line continuation mark) is read
!
REPEAT
    BEGIN
    CHAR = CH$RCHAR_A(LIST_PTR);
    SELECTONE .CHAR OF
        SET

        [0]:
            BEGIN
            !
            ! End of list
            !       Add a default value to the last argument if it did not
            !       have one.
            !       Set VAR_ARGS if the name of the last argument is
            !       END_VARNUM_ARGS
            !
            TRY_ADD_DEFAULT;
            IF .STATE GEQ 1
            THEN
                IF
                    CH$EQL(
                        CH$DIFF(.CALL_PTR, .BEGIN_ARG),
                        .BEGIN_ARG,
                        CH$LEN_PTR('END_VARNUM_ARGS'),
                        0)
                THEN
                    VAR_ARGS = 1;

            EXITLOOP
            END;

        [%C'A' TO %C'Z',  %C'0' TO %C'9',  %C'_',  %C'$']:
            BEGIN
            !
            ! Symbol constituent
            !       If STATE is zero, it is the first character of a formal name
            !       STATE distinguishes scanning formal name from scanning default value
            !
            IF .STATE EQL 0
            THEN
                BEGIN
                STATE = 1;
                BEGIN_ARG = .CALL_PTR
                END;

            IF .STATE EQL 1 THEN CH$WCHAR_A(.CHAR, CALL_PTR);
            CH$WCHAR_A(.CHAR, ARG_PTR)
            END;

        [%C'=']:
            BEGIN
            !
            ! Beginning of default value
            !       Set STATE to indicate scanning default and collect character
            !
            STATE = 2;
```

_$

Vi
St
Im
Im
Im
Nu
Nu
Nu
Nu
Nu
Nu
Us
Im
Ma
Es

Pe
--

To

Us

To

Nu

9

A

LI

```
4                   CH$WCHAR_A(.CHAR, ARG_PTR)
3                   END;
3
3               [%C',']:
4                   BEGIN
4                   !
4                   ! End of argument
4                   !       Add a default value to the argument if it did not have one
4                   !       Collect the character
4                   !       Reset STATE to indicate not within an argument
4                   !
4                   TRY_ADD_DEFAULT;
4                   CH$WCHAR_A(.CHAR, CALL_PTR);
4                   CH$WCHAR_A(.CHAR, ARG_PTR);
4                   STATE = 0
3                   END;
3
3               [%C'-']:
4                   BEGIN
4                   !
4                   ! Line continuation indicator
4                   !       Get a new line and reset LIST_PTR
4                   !
4                   CH$WCHAR_A( 0, CALL_PTR );
4                   CH$WCHAR_A( 0, ARG_PTR );
4
4                   $XPO_GET(IOB=INPUT);
4                   INPUT_LENGTH = .INPUT[IOB$H_STRING];
4                   INPUT_PTR = .INPUT[IOB$A_STRING];
4                   CH$COPY(.INPUT_LENGTH, .INPUT_PTR,
4                            0,
4                           MAX_REC_SIZE, .OUTPUT_PTR);
4                   LIST_PTR = .OUTPUT_PTR
3                   END;
3
3               [%C';']:
3                   !
3                   ! MACRO comment character
3                   !       The remainder of the line is "ignorable"
3                   !
3                   EXITLOOP
3               TES
2           END;
2
2       ! Set up implicit outputs as noted
2       ! If variable number of arguments, then replace CALL_LIST by "%REMAINING"
2           since this is the call argument
2       !
2       ARG_LENGTH = CH$DIFF(.ARG_PTR, CH$PTR(ARG_LIST));
2       ARG_PTR = CH$PTR(ARG_LIST);
2
2       IF .VAR_ARGS
2       THEN
3           BEGIN
3           CH$COPY(
3               CH$LEN_PTR('%REMAINING'),
;  622        0618     3            0,
;  623        0619     3            MAX_ARG_LIST,
;  624        0620     3            CH$PTR(CALL_LIST));
;  625        0621     3        CALL_LENGTH = %CHARCOUNT('%REMAINING');
;  626        0622     3        END
;  627        0623     2    ELSE
;  628        0624     2        CALL_LENGTH = CH$DIFF(.CALL_PTR, CH$PTR(CALL_LIST));
;  629        0625     2
;  630        0626     2    CALL_PTR = CH$PTR(CALL_LIST)
;  631        0627     1    END;
; INFO#250               L1:0526
; Referenced LOCAL symbol BEGIN_ARG is probably not initialized



                                                                        .PSECT   $PLIT$,NOWRT,NOEXE,2

53  47  52  41  5F  4D  55  4E  52  41  56  5F  44  4E  45   00114 P.ABA: .ASCII   \END_VARNUM_ARGS\<0>                     ;
                                                        00   00123                                                          ;
            00  00  47  4E  49  4E  49  41  4D  45  52  25   00124 P.ABB: .ASCII   \%REMAINING\<0><0>                       ;

                                                                   IOB$=              INPUT


                                                                        .PSECT   $CODE$,NOWRT,2

                                                        07FC 00000 CONVARGLIST:
                                                                        .WORD    Save R2,R3,R4,R5,R6,R7,R8,R9,R10        ; 0447
                                        5A    0000'   CF  9E 00002      MOVAB    ARG_PTR, R10                            ;
                                        6A       08   AA  9E 00007      MOVAB    ARG_LIST, ARG_PTR                       ; 0493
    OFFF   8F            00             6E            00  2C 0000B      MOVC5    #0, (SP), #0, #4095, @ARG_PTR           ; 0494
                                                 00   BA     00012                                                       ;
                                1008    CA     1010   CA  9E 00014      MOVAB    CALL_LIST, CALL_PTR                     ; 0495
    OFFF   8F            00             6E            00  2C 0001B      MOVC5    #0, (SP), #0, #4095, @CALL_PTR          ; 0496
                                               1008   DA     00022                                                       ;
                         59       04    AC            03  C1 00025      ADDL3    #3, TEMP_PTR, LIST_PTR                  ; 0497
                                               2010   CA  D4 0002A      CLRL     VAR_ARGS                                ; 0498
                                                      57  D4 0002E 1$:  CLRL     STATE                                   ; 0499
                                        56            89  9A 00030 2$:  MOVZBL   (LIST_PTR)+, CHAR                       ; 0508
                                                      2D  12 00033      BNEQ     5$                                      ; 0512
                                        01            57  D1 00035      CMPL     STATE, #1                               ; 0513
                                                      0C  12 00038      BNEQ     3$                                      ;
                                  00    BA            3D  90 0003A      MOVB     #61, @ARG_PTR                           ;
                                                      6A  D6 0003E      INCL     ARG_PTR                                 ;
                                  00    BA            30  90 00040      MOVB     #48, @ARG_PTR                           ;
                                                      6A  D6 00044      INCL     ARG_PTR                                 ;
                                                      57  D5 00046 3$:  TSTL     STATE                                   ; 0522
                                                      15  15 00048      BLEQ     4$                                      ;
                         50     1008    CA            58  C3 0004A      SUBL3    BEGIN_ARG, CALL_PTR, R0                 ; 0526
           0F            00             68            50  2D 00050      CMPC5    R0, (BEGIN_ARG), #0, #15, P.ABA         ;
                                              0000'   CF     00055                                                       ;
                                                      05  12 00058      BNEQ     4$                                      ;
                                2010    CA            01  D0 0005A      MOVL     #1, VAR_ARGS                            ; 0531
                                                    00CF  31 0005F 4$:  BRW      17$                                     ; 0513
                                        24            56  D1 00062 5$:  CMPL     CHAR, #36                               ; 0536
                                                      25  13 00065      BEQL     8$                                      ;
                                        30            56  D1 00067      CMPL     CHAR, #48                               ;
```

```
                                                      05  19 0006A        BLSS    6$                                          ;
                                    39                56  D1 0006C        CMPL    CHAR, #57                                   ;
                                                      1B  15 0006F        BLEQ    8$                                          ;
                         00000041   8F                56  D1 00071 6$:    CMPL    CHAR, #65                                   ;
                                                      09  19 00078        BLSS    7$                                          ;
                         0000005A   8F                56  D1 0007A        CMPL    CHAR, #90                                   ;
                                                      09  15 00081        BLEQ    8$                                          ;
                         0000005F   8F                56  D1 00083 7$:    CMPL    CHAR, #95                                   ;
                                                      1C  12 0008A        BNEQ    10$                                         ;
                                                      57  D5 0008C 8$:    TSTL    STATE                                       ; 0543
                                                      08  12 0008E        BNEQ    9$                                          ;
                                    57                01  D0 00090        MOVL    #1, STATE                                   ; 0546
                                    58        1008    CA  D0 00093        MOVL    CALL_PTR, BEGIN_ARG                         ; 0547
                                    01                57  D1 00098 9$:    CMPL    STATE, #1                                   ; 0550
                                                      13  12 0009B        BNEQ    11$                                         ;
                             1008   DA                56  90 0009D        MOVB    CHAR, @CALL_PTR                             ;
                                              1008    CA  D6 000A2        INCL    CALL_PTR                                    ;
                                                      08  11 000A6        BRB     11$                                         ; 0551
                                    3D                56  D1 000A8 10$:   CMPL    CHAR, #61                                   ; 0554
                                                      0B  12 000AB        BNEQ    12$                                         ;
                                    57                02  D0 000AD        MOVL    #2, STATE                                   ; 0560
                               00   BA                56  90 000B0 11$:   MOVB    CHAR, @ARG_PTR                              ; 0561
                                                      6A  D6 000B4        INCL    ARG_PTR                                     ;
                                                      71  11 000B6        BRB     15$                                         ; 0509
                                    2C                56  D1 000B8 12$:   CMPL    CHAR, #44                                   ; 0564
                                                      23  12 000BB        BNEQ    14$                                         ;
                                    01                57  D1 000BD        CMPL    STATE, #1                                   ; 0565
                                                      0C  12 000C0        BNEQ    13$                                         ;
                               00   BA                3D  90 000C2        MOVB    #61, @ARG_PTR                               ;
                                                      6A  D6 000C6        INCL    ARG_PTR                                     ;
                               00   BA                30  90 000C8        MOVB    #48, @ARG_PTR                               ;
                                                      6A  D6 000CC        INCL    ARG_PTR                                     ;
                             1008   DA                56  90 000CE 13$:   MOVB    CHAR, @CALL_PTR                             ; 0573
                                              1008    CA  D6 000D3        INCL    CALL_PTR                                    ;
                               00   BA                56  90 000D7        MOVB    CHAR, @ARG_PTR                              ; 0574
                                                      6A  D6 000DB        INCL    ARG_PTR                                     ;
                                                    FF4E  31 000DD        BRW     1$                                          ; 0575
                                    2D                56  D1 000E0 14$:   CMPL    CHAR, #45                                   ; 0578
                                                      47  12 000E3        BNEQ    16$                                         ;
                                              1008    DA  94 000E5        CLRB    @CALL_PTR                                   ; 0584
                                              1008    CA  D6 000E9        INCL    CALL_PTR                                    ;
                                                00    BA  94 000ED        CLRB    @ARG_PTR                                    ; 0585
                                                      6A  D6 000F0        INCL    ARG_PTR                                     ;
                             2134   CA                06  90 000F2        MOVB    #6, IOB$+44                                 ; 0587
                                         00000000G    EF  9F 000F7        PUSHAB  XPO$FAILURE                                 ;
                                                      7E  D4 000FD        CLRL    -(SP)                                       ;
                                              2108    CA  9F 000FF        PUSHAB  IOB$                                        ;
                        00000000G   EF                03  FB 00103        CALLS   #3, XPO$GET                                 ;
                             FF74   CA        213C    CA  3C 0010A        MOVZWL  INPUT+52, INPUT_LENGTH                      ; 0588
                             FF70   CA        2140    CA  D0 00111        MOVL    INPUT+56, INPUT_PTR                         ; 0589
0082    8F          00       FF70   DA        FF74    CA  2C 00118        MOVC5   INPUT_LENGTH, @INPUT_PTR, #0, #130, -       ; 0592
                                                FC    BA     00123                @OUTPUT_PTR                                 ;
                                    59          FC    AA  D0 00125        MOVL    OUTPUT_PTR, LIST_PTR                        ; 0593
                                                    FF04  31 00129 15$:   BRW     2$                                          ;
                                    3B                56  D1 0012C 16$:   CMPL    CHAR, #59                                   ; 0596
                                                      F8  12 0012F        BNEQ    15$                                         ;
                                    50          08    AA  9E 00131 17$:   MOVAB   ARG_LIST, R0                                ; 0610
```

```
             04    AA            6A            50  C3 00135          SUBL3   R0, ARG_PTR, ARG_LENGTH                    ;
                                 6A     08     AA  9E 0013A          MOVAB   ARG_LIST, ARG_PTR                          ; 0611
                                 13   2010     CA  E9 0013E          BLBC    VAR_ARGS, 18$                              ; 0613
   0FFF    8F        00   0000'  CF            0A  2C 00143          MOVC5   #10, P.ABB, #0, #4095, CALL_LIST           ; 0620
                                      1010     CA     0014C                                                             ;
                         100C    CA            0A  D0 0014F          MOVL    #10, CALL_LENGTH                           ; 0621
                                               0D  11 00154          BRB     19$                                        ; 0613
                                 50   1010     CA  9E 00156 18$:     MOVAB   CALL_LIST, R0                              ; 0624
            100C   CA    1008    CA            50  C3 0015B          SUBL3   R0, CALL_PTR, CALL_LENGTH                  ;
                         1008    CA   1010     CA  9E 00163 19$:     MOVAB   CALL_LIST, CALL_PTR                        ; 0626
                                               04     0016A          RET                                                ; 0627

; Routine Size:  363 bytes,    Routine Base:  $CODE$ + 0521
;  633          0628  1 END                                    ! End of module MARBLI
;  634          0629  0 ELUDOM




;                                         PSECT SUMMARY
;
;       Name                        Bytes                            Attributes
;
;  $OWN$                               9292  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $PLIT$                               304  NOVEC,NOWRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $CODE$                              1676  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)




;                                  Library Statistics
;
;                                                    -------- Symbols --------       Pages       Processing
;       File                                         Total   Loaded   Percent       Mapped      Time
;
;  _$255$DUA28:[SYSLIB]XPORT.L32;1                      590      116        19        252          00:00.1




; Information:  1
; Warnings:     0
; Errors:       0




;                                         COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:MARBLI/OBJ=OBJ$:MARBLI MSRC$:MARBLI/UPDATE=(ENH$:MARBLI)

; Size:          1676 code + 9596 data bytes
; Run Time:         00:39.3
; Elapsed Time:     01:50.6
; Lines/CPU Min:       959
; Lexemes/CPU-Min: 74449
; Memory Used:  247 pages
; Compilation Complete
```

0233 AH-BT13A-SE
VAX/VMS V4.0

DIGITAL EQUIPMENT CORPORATION
CONFIDENTIAL AND PROPRIETARY